UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/571,189	03/09/2006	Richard S. Farrell	154.0001USWO	4202

57557 7590 12/08/2008

PAULY, DEVRIES SMITH & DEFFNER, L.L.C.
Plaza VII-Suite 3000
45 South Seventh Street
MINNEAPOLIS, MN 55402-1630

EXAMINER	
BEYEN, ZEWDU A	
ART UNIT	PAPER NUMBER
4144	

MAIL DATE	DELIVERY MODE
12/08/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/571,189	FARRELL ET AL.	
	Examiner	Art Unit	
	ZEWDU BEYEN	4144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03/09/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45 and 47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45 and 47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03/09/2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-45 and 47 have been examined and are pending.

Claim Objections

2. Claims 3-7, 9, 12, 14, 15, 19-24, 30, 32-34, and 41 are objected to because of the following informalities: The use of language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure, See MPEP Section 2106 Patent Subject Matter Eligibility. Please refrain from the use of "*adapted to*", "*adapted for*", and "*wherein*" clauses in the above stated claims. Appropriate correction is required.

3. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not). Claim 47 is misnumbered, appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 3,6,16, 19-23,26,30, 34,35, and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. In claims 3, 34, 35, and 39, the phrase "optionally" induces ambiguity on the claimed invention. In claims 19-23 and 30 the phrase "if necessary" creates ambiguity on the claimed invention. In claims 6, 16, and 26, the phrase "exclusive" induces ambiguity on the claimed invention.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States .

7. Claims 1,2,24,27-29,31-32,36-37, 41,42, 43, 44 ,45,and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Ando et al. to **(US-PGPUB-2002/0044556)**

Regarding claims 1, 42, 43,44 and 47, Ando teaches the steps of (a) using a source packet interceptor to intercept an IP packet from a source application **(i.e. Fig.3 left box 24)** , (b) using a source edge process to act as the new destination for the source application **(i.e. Fig.3 left box 22)**, (c) using a source packet driver to aggregate the intercepted IP packets**(i.e. Fig.3 left box 22),** (d) using a source data mover to transport the aggregated IP packets over a communication link to a destination data mover **(i.e. Fig.3 left box 22),** (e) using a destination packet driver to disaggregate the

transported aggregated packets **(i.e. Fig.3 right box 22)**, (f) using a destination edge process to deliver the disaggregated IP packets to a destination application**(i.e. Fig.3 right box 24)**.

Regarding independent claims **42, 43,44 and 47,** the examiner maintains the added limitations with respect to claim 1 are not novel and are not patentable.

Regarding claim 2, Ando teaches the transport protocol optimization method of claim 1, comprising the step of using IP routing **([0042] discloses transmitting IP packet).**

Regarding claim 24, Ando teaches the transport protocol optimization method of claim 1 wherein packets are intercepted by an operating system exit point **(see Fig.3, discloses the packets are received at the exit point of data terminal 24)**.

Regarding claim 27, Ando teaches the transport protocol optimization method of claim 1, comprising the step of terminating any connection between a source application and a destination application **(fig 3 discloses and [0013] disclose the packets are transmitted with priority and there is a consistence turning on and off the transmission to account for priority).**

Regarding claim 28, Ando teaches the transport protocol optimization method of claim 1, comprising the step of opening a connection between a source data mover and a

destination data mover **(fig.3 discloses the multiplexers are connected over an IP network).**

Regarding claim 29, Ando teaches the transport protocol optimization method of claim 28, comprising the steps of (a) opening a connection between the source application and the source edge processor and (b) opening a connection between the destination edge processor and the destination application**(fig.3 discloses the multiplexer is connecter with the destination application)** .

Regarding claim 32, Ando teaches the transport protocol optimization method of claim 17, wherein the decompression engine performs the step of decompressing the aggregated packet driver messages **(fig 3 discloses a multiplexer).**

Regarding claim 36, Ando teaches the transport protocol optimization method of claim 1, comprising the step of integrating the source packet interceptor, driver, end processors, compression engine, and data mover into a source TPO **(in fig 3, the multiplexers and the wire encompass the purpose of interceptor, driver, end processors, compression engine, and data mover).**

Regarding claim 37, Ando teaches the transport protocol optimization method of claim 1, comprising the step of integrating the packet interceptor, driver, end processors, compression engine, and data mover into a destination TPO **(in fig.3, the multiplexers**

and the wire encompass the purpose of interceptor, driver, end processors, compression engine, and data mover).

Regarding claim 31, Ando teaches the transport protocol optimization method of claim 29, comprising the steps of (a) transporting packets from the source application to the source packet interceptor over a source LAN and (b) transporting packets delivered to a destination data mover to a destination application over a destination LAN **(fig.3 discloses the source application to the source packet interceptor over a source over an IP network to a destination data mover to a destination application over a destination).**

Regarding claim 41, Ando teaches The transport protocol optimization method of claim 40, wherein the packets from the source application are transported over the source LAN to the source TPO and the packets from the destination application are transported over the destination LAN to the destination TPO **(fig.3 discloses the source application to the source packet interceptor over a source over an IP network to a destination data mover to a destination application over a destination).**

Regarding claim 45, Ando teaches the internet protocol optimizer device of claim 44 also comprising a second packet driver and second edge processor **(fig 3 discloses two multiplexers connected with source and destination terminal).**

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 4, 5 and 25 are rejected under 35 U.S.C. 103(a) over Ando et al. to **(US-PGPUB-2002/0044556) and in further view Yan to (US2005/0018651)**

Regarding claim 4, Ando silent on the transport protocol optimization method of claim 1, wherein intercepting an IP packet from the source application comprises the steps of comparing the IP packet's address to packet addresses in a look-up table and (b) intercepting only those source packets with the same addresses as those stored in the look-up table.

However, Yan discloses the steps of comparing the IP packet's address to packet addresses in a look-up table and (b) intercepting only those source packets with

the same addresses as those stored in the look-up table(a discrimination table, figure 5, box 106).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ando by including the steps of comparing the IP packet's address to packet addresses in a look-up table and (b) intercepting only those source packets with the same addresses as those stored in the look-up table, as suggested by Yan. This modification would benefit the system to processes packets selectively.

Regarding claim 25, the combination of Ando-Yan, discloses the transport protocol optimization method of claim 4 comprising the step of modifying the destination address of the IP packets accepted for interception to be the address of the source packet interceptor **(Yan, fig. 3a box 196, translate the source IP address)**.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ando-Yan by modifying the destination address of the IP packets accepted for interception to be the address of the source packet interceptor, as suggested by Yan. This modification would benefit the system by increasing packet delivery reliability (Yan, col.3 lns 40-44).

Regarding claim 5, Though Ando does not explicitly discloses the transport protocol

optimization method of claim 1, wherein the address of the IP packet comprises the packet's source IP address, source port number, destination IP address, destination port number, and protocol type, it is obvious to one of ordinary skill in the art standard IP frame contains the above mentioned fields **(for instance, Yan ,fig 10 discloses outbound client data with source IP address, source port number, destination IP address, destination port number, and protocol type).**

10. Claims 7-15 and 17-18 are rejected under 35 U.S.C. 103(a) over Ando et al. to **(US-PGPUB-2002/0044556)** further in view of Chapman et al. to **(US6643292)**

Regarding claim 7, Ando silent on the transport protocol optimization method of claim 1, wherein intercepting an IP packet from the source application comprises the steps of an edge process (a) reading the data contained in the routed IP packets and (b) forming a message header field for the routed IP packets.

However, Chapman teaches the transport protocol optimization method of claim 1, wherein intercepting an IP packet from the source application comprises the steps of an edge process (a) reading the data contained in the routed IP packets and (b) forming a message header field for the routed IP packets **(Chapman, col. 3 lns 60-62 discloses encapsulating packets and including TCP header).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ando by including the steps of an edge process (a) reading the data contained in the routed IP packets and (b) forming a message header field for the routed IP packets, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 15, the combination of Ando-Chapman teach the transport protocol optimization method of claim 7, wherein the message header comprises a version field, a length of header field, a message function type field, a message flag field, a protocol type field, a sequence number field, a source IP address field, a destination IP address field, a source IP port number field, a destination IP port number field, a length of data field, and a status field(Chapman , **fig.5 and fig.7 (TCP/IP) discloses version field, a length of header field, a message function type field, a message flag field, a protocol type field, a sequence number field, a source IP address field, a destination IP address field, a source IP port number field, a destination IP port number field, a length of data field, and a status field).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ando-Chapman by including wherein the message header comprises a version field, a length of header field, a message function type field, a message flag field, a protocol type field, a sequence number field,

a source IP address field, a destination IP address field, a source IP port number field, a destination IP port number field, a length of data field, and a status field, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 8, Ando silent on the transport protocol optimization method of claim 1, comprising the step of the packet driver forming a packet driver message.

However, Chapman teaches the transport protocol optimization method of claim 1, comprising the step of the packet driver forming a packet driver message(Chapman **,col. 3 lns 60-62 discloses encapsulating packets and including TCP header (which form TCP/IP packet) before sending to the transport network).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ando by including the step of the packet driver forming a packet driver message, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 9, the combination of Ando-Chapman teach the transport protocol optimization method of claim 8, wherein the packet driver message comprises the message header field and intercepted IP packet data from one edge process

(Chapman, fig.5 and fig.7 discloses packets with header field when combining these two packets it gives the TCP/IP data).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ando-Chapman by including the packet driver message comprises the message header field and intercepted IP packet data from one edge process, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 10, the combination of Ando-Chapman teach the transport protocol optimization method of claim 9, comprising the step of forming a plurality of packet driver messages (Chapman **, col. 3 lns 60-62 discloses encapsulating packets and including TCP header (which form TCP/IP packet) before sending to the transport network).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ando-Chapman by including the step of forming a plurality of packet driver messages, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 11, the combination of Ando-Chapman teach the transport protocol

optimization method of claim 10, comprising the step of aggregating multiple packet driver messages into a packet driver buffer **(Chapman ,col.2 lns 61-62 discloses aggregating TCP packets into buffer).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ando-Chapman by including the step of aggregating multiple packet driver messages into a packet driver buffer, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 12 the combination of Ando-Chapman teach the transport protocol optimization method of claim 11, wherein the size of the aggregated packet driver messages is less than or equal to a predetermined maximum size of the buffer **(Chapman , col.2 lns 62-64, discloses TCP packets are suitable for first-in-first-out queues, so it will maintain the right level at all time).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ando-Chapman by including the size of the aggregated packet driver messages is less than or equal to a predetermined maximum size of the buffer, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 13, the combination of Ando-Chapman teach the transport protocol optimization method of claim 12, comprising the step of the packet driver forming a routing header in the packet driver buffer that precedes the first packet driver message (Chapman, **col.5 lns 28-31, discloses Transport Access Point compresses customer packets and add routing header).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ando-Chapman by including the step of the packet driver forming a routing header in the packet driver buffer that precedes the first packet driver message, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 14, the combination of Ando-Chapman teach the transport protocol optimization method of claim 13, wherein the routing header comprises a function type field, a number of packet driver messages field, and a data length field (Chapman , **fig.5 discloses IP header that contains : function type field, a number of packet messages field, and a data length field).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ando-Chapman by including the routing header comprises a function type field, a number of packet driver messages field, and a

data length field, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 17, the combination of Ando-Chapman teach the transport protocol optimization method of claim 11, comprising the step of using a compression engine to compress the packet driver buffer (Chapman, **col.5 lns 27-29, discloses Transport Access Point compresses customer packets).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ando-Chapman by including the step of using a compression engine to compress the packet driver buffer, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 18, the combination of Ando-Chapman teach the transport protocol optimization method of claim 17, comprising the step of routing the packet driver buffer to the data mover (Chapman, **col.5 lns 27-29 , discloses at the transport access point after aggregating customers packets pass it to the router).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ando-Chapman by including the step of routing the packet driver buffer to the data mover, as suggested by Chapman. This

modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

11. Claims 33 and 40 are rejected under 35 U.S.C. 103(a) over Ando et al. to **(US-PGPUB-2002/0044556) and in further view of one**

Regarding claim 33, though Ando does not explicitly teaches the transport protocol optimization method of claim 1, wherein optimization is comprised of the step of optimization using transport protocol optimization source software and destination software. However, it is obvious for one ordinary skilled in the art at the time the invention was made to include a using transport protocol optimization source software and destination software, as design choice.

Regarding claim 40, though Ando does not explicitly teaches the transport protocol optimization method of claim 1, comprising the steps of (a) attaching a source server running the source application on a source LAN, (b) attaching a source TPO on the source LAN and, (c) attaching a destination server running a destination application on a destination LAN, and (d) attaching a destination TPO on the destination LAN.

However, Ando discloses in fig.3 multiplexers that attached between a source application and destination application to aggregate and de-aggregate packets over an IP network.

Therefore, it would have been obvious for one ordinary skilled in the art at the time the invention was made to aggregate and de-aggregate the packets before sending to the network and after receiving the packet from the network as a matter of design choice.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (See PTO-892).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zewdu Beyen whose telephone number is (571)-270-7157. The examiner can normally be reached on 8:00-5:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Taghi T. Arani can be reached on (571) 272-3787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ZEWDU BEYEN/

Examiner, Art Unit 4144

/Ronald Abelson/

Primary Examiner, Art Unit 2419